

**PRESSURE SENSITIVE SCROLLBAR FEATURE**

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Equivalents: CN1202254, ☐ EP0861462 (WO9718508), JP11511580T  
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**Abstract**

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A proximity sensor system includes a sensor matrix array having a characteristic capacitance on horizontal and vertical conductors connected to sensor pads. The capacitance changes as a function of the proximity of an object to the sensor matrix. The change in capacitance of each node in both the X and Y directions of the matrix due to the approach of an object is converted to a set of voltages in the X and Y directions. These voltages are processed by circuitry to develop electrical signals representative of the centroid of the profile of the object, i.e., its position in the X and Y dimensions. Noise reduction and background level setting techniques inherently available in the architecture are employed. Pressure information is used to modify the scrolling speed.

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## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

<b>(51) International Patent Classification <sup>6</sup>:</b> <b>G06F 3/033</b>	<b>A1</b>	<b>(11) International Publication Number:</b> <b>WO 97/18508</b> <b>(43) International Publication Date:</b> 22 May 1997 (22.05.97)
<b>(21) International Application Number:</b> PCT/US96/17862 <b>(22) International Filing Date:</b> 6 November 1996 (06.11.96)  <b>(30) Priority Data:</b> 08/558,114 13 November 1995 (13.11.95) US  <b>(71) Applicant:</b> SYNAPTICS, INC. [US/US]; 2698 Orchard Parkway, San Jose, CA 95134 (US).  <b>(72) Inventors:</b> GILLESPIE, David; 220 Ventura Avenue #8, Palo alto, CA 94306 (US). ALLEN, Timothy, P.; 16100 Soda Springs Road, Los Gatos, CA 95030 (US). FERRUCCI, Aaron, T.; 2004 Ocean Street Ext., Santa Cruz, CA 95060 (US).  <b>(74) Agents:</b> D'ALESSANDRO, Kenneth et al.; D'Alessandro & Ritchie, P.O. Box 640640, San Jose, CA 95164-0640 (US).		<b>(81) Designated States:</b> CN, JP, KR, European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE).  <b>Published</b> <i>With international search report.          Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i>
<b>(54) Title:</b> PRESSURE SENSITIVE SCROLLBAR FEATURE  <b>(57) Abstract</b> <p>A proximity sensor system includes a sensor matrix array having a characteristic capacitance on horizontal and vertical conductors connected to sensor pads. The capacitance changes as a function of the proximity of an object to the sensor matrix. The change in capacitance of each node in both the X and Y directions of the matrix due to the approach of an object is converted to a set of voltages in the X and Y directions. These voltages are processed by circuitry to develop electrical signals representative of the centroid of the profile of the object, i.e., its position in the X and Y dimensions. Noise reduction and background level setting techniques inherently available in the architecture are employed. Pressure information is used to modify the scrolling speed.</p> <div data-bbox="899 1113 1377 1858" data-label="Diagram"> </div>		

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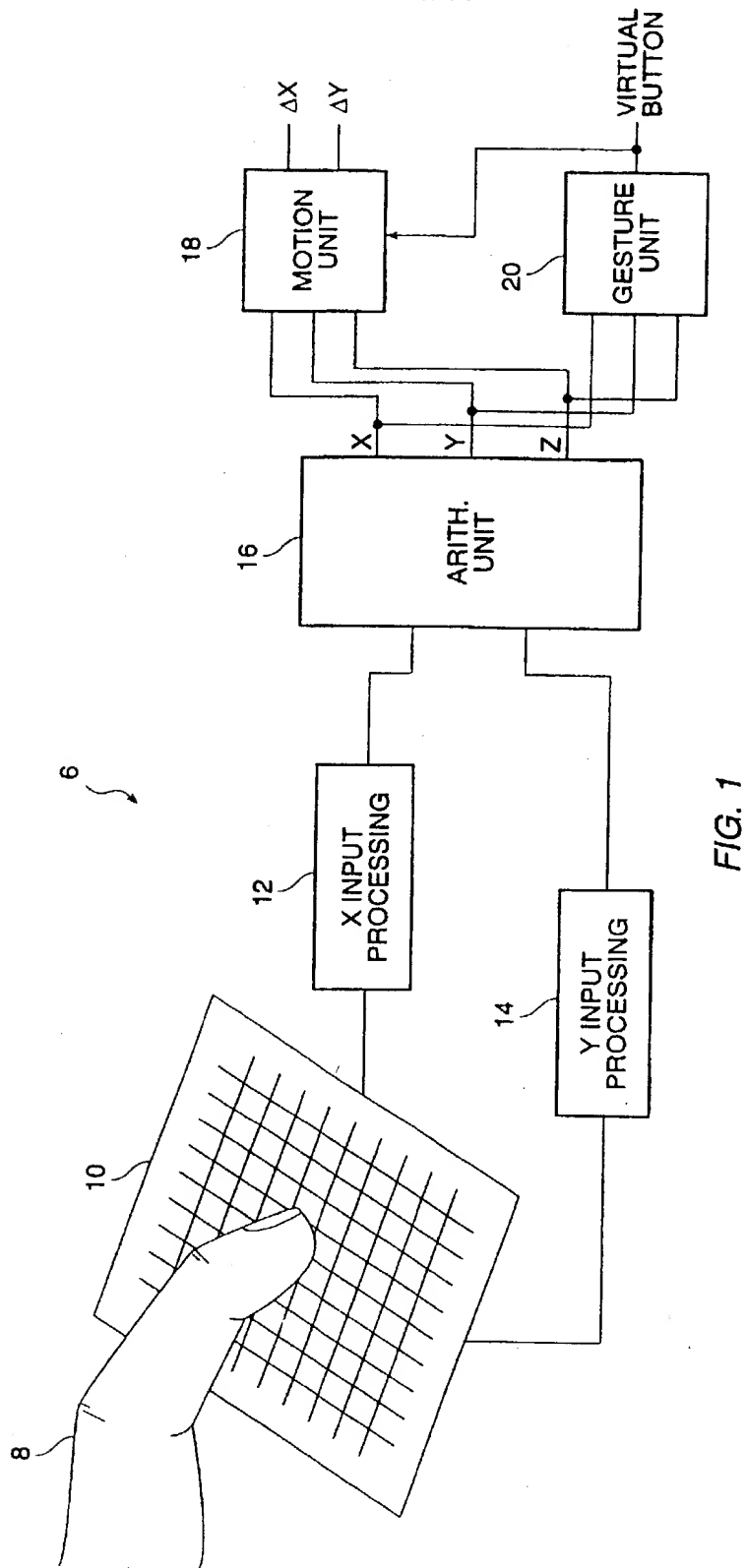


FIG. 1

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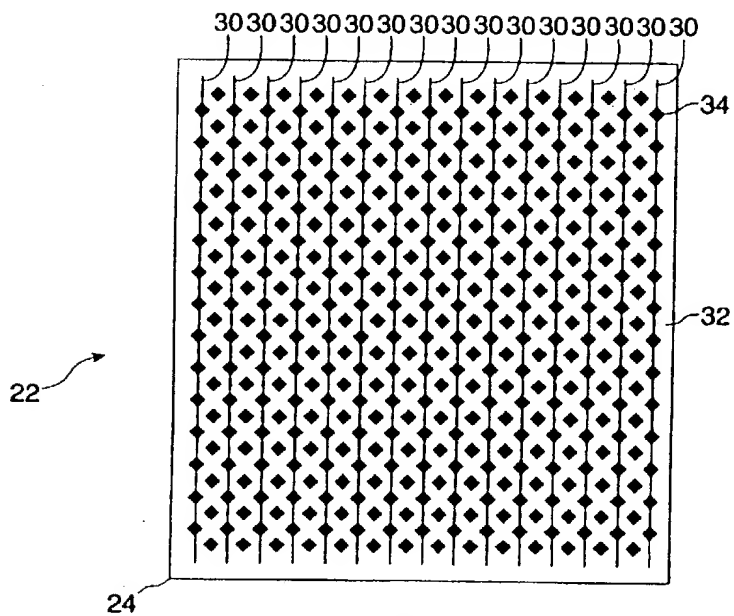


FIG. 2A

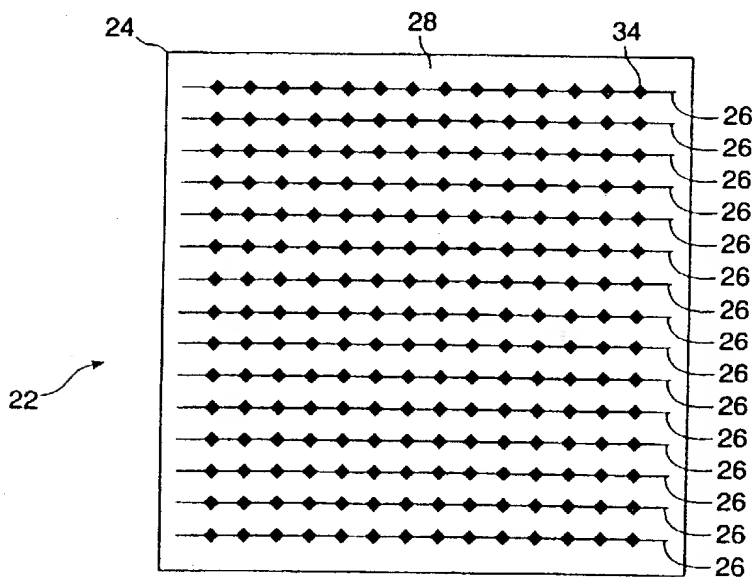


FIG. 2B

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